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EXAMINER

WILLIAMS, AARON

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2889

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,931	Applicant(s) LIFKA ET AL.	
	Examiner Aaron Williams	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/12/2007, 1/9/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-12, 20-28 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,570,325 to Graff et al., herein refer to as Graff.

Regarding claim 1, Graff discloses an encapsulation structure (Figure 1, first barrier stack (115), refer to paragraph [0026]) for a display device, comprising a dielectric sealing structure (3) (figure 1, first barrier layer (130), refer to paragraph [0034]), characterized in that the encapsulation structure also comprises a stabilisation layer (5) (Figure 1, first decoupling layer (125), paragraph [0041]).

Regarding claim 2, Graff discloses an encapsulation structure according to claim 1, wherein said stabilisation layer (5) (decoupling layer (125)) is of a polymeric material refer to paragraph [0043].

Regarding claim 3, Graff discloses an encapsulation structure according to claim 1, wherein said sealing structure (3) (Figure 3, first barrier stack (315),(320)) comprises a first layer (6) (Figure 3, first barrier layer (345)) of a first dielectric material and a

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second layer (7) (Figure 3, first barrier layer (360)) of a second dielectric material. Refer to paragraph [0034] where Graff disclose the first barrier layer can be composed of the same or different material and list the material that make up the layers composition.

Regarding claim 4, Graff discloses an encapsulation structure according to claim 3, wherein said sealing structure (3) (Figure 3, first barrier stacks (315), (320)) comprises a third layer (8) (Figure 3, first barrier layer (365)) of a third dielectric material. Refer to paragraph [0034] where Graff disclose the first barrier layer can be composed of the same or different material and list the material that make up the layers composition.

Regarding claim 5, Graff discloses an encapsulation structure according to claim 4, wherein said third dielectric material is the same as said first dielectric material. Refer to paragraph [0034] where Graff disclose the first barrier layer can be composed of the same or different material and list the material that make up the layers composition.

Regarding claim 6, Graff discloses an encapsulation structure according to claim 3, wherein said first dielectric material is selected from the group comprising silicon nitride, aluminum nitride and any mixture thereof, and wherein said second dielectric material is selected from the group comprising silicon oxide, silicon oxide fluoride, titanium oxide, tantalum oxide, zirconium oxide, hafnium oxide, aluminium oxide and any mixture thereof. Refer to paragraph [0034] where Graff disclose the first barrier layer can be composed of the same or different material and list the material that make up the layers composition.

Regarding claim 7, Graff discloses an encapsulation structure according to claim 3, wherein said first dielectric material is selected from the group comprising silicon oxide, silicon oxide fluoride, titanium oxide, tantalum oxide, zirconium oxide, hafnium oxide, aluminium oxide and any mixture thereof, and wherein said second dielectric material is selected from the group comprising silicon nitride, aluminium nitride and any mixture thereof. Refer to paragraph [0034] where Graff disclose the first barrier layer can be composed of the same or different material and list the material that make up the layers composition.

Regarding claim 8, Graff discloses an encapsulation structure according to claim 1, wherein said stabilisation layer (5) (Figure 1, first decoupling layer (125), paragraph [0041]) covers at least some protruding structures (4) (Defects in layer or organic light emitting device (not shown)) of said display device, and forms an essentially planar surface over said protruding structures (4). Refer to paragraph [0041] for details how the decoupling layer reduces surface imperfections.

Regarding claim 9, Graff discloses an encapsulation structure according to claim 1, wherein an essentially cavity-free interface is formed between said stabilisation layer (5) (decoupling layer (125)) and said sealing structure (3) (first barrier layer (130)).

Regarding claim 10, Graff discloses an encapsulation structure according to claim 1, wherein the thermal expansion coefficient of said stabilisation layer (5) (decoupling layer (125)) is essentially the same as the thermal expansion coefficient of said sealing structure (3) (first barrier layer (130)). Since the materials are anticipated the limitations of claim 10 are anticipated.

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Regarding claim 11, Graff discloses an encapsulation structure according to claim 1, wherein the thickness of said stabilisation layer (5) (decoupling layer (125)) is at least 0.1 μm refer to paragraph [0027] where the thickness range is 0.1-1.0 μm .

Regarding claim 12 Graff discloses an encapsulation structure according to claim 1, wherein said encapsulation structure is transparent. Refer to paragraph [0036] where Graff defines transparent greater than 40% transmission of visible light.

Regarding claim 20, Graff discloses an encapsulation structure according to claim 1, wherein said display device is selected from a polyLED display, a OLED display (OLED (200)) or a Liquid Crystal Display. Refer to paragraph [0030].

Regarding claim 22, Graff discloses a method for the manufacture of an encapsulation structure for a display device comprising depositing a dielectric sealing structure (3) (Figure 1, first barrier layer (130), refer to paragraph [0035]), and depositing a stabilisation layer (5) (Figure 1, first decoupling layer (125), paragraph [0042]).

Regarding claim 23, Graff discloses a method according to claim 22, wherein said depositing of a stabilisation layer (5) (decoupling layer (125)) comprises depositing a curable composition, and curing said curable composition refer to paragraph [0043].

Regarding claim 24, Graff discloses a method according to claim 23, wherein said curing is thermal curing refer to paragraph [0043].

Regarding claim 25, Graff discloses a method according to claim 22 wherein said stabilisation layer (5) (decoupling layer (125)) is deposited by inkjet printing refer to paragraph [0042].

Regarding claim 26, Graff discloses a method according to claim 22 wherein said display device is selected from a polyLED display, an OLED display (OLED (200)) and a LCD display. Refer to paragraph [0030].

Regarding claim 27, Graff discloses a display device (OLED (200)) comprising an encapsulation structure according to claim 1. Refer to paragraph [0030].

Regarding claim 28, Graff discloses a display device (OLED (200)) obtainable by the method according to claim 22. Refer to paragraph [0030].

4. Claims 1, 13-19, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Grant Publication 2003/0003225 by Choi et al., herein refer to as Choi.

Regarding claim 1, Choi discloses an encapsulation for a display device, comprising a dielectric sealing structure (3) (figure 2, passivation layer (130), refer to paragraph [0027]), characterized in that the encapsulation structure also comprises a stabilisation layer (5) (Figure 2, high-density uniform layer (131), paragraph [0049]).

Regarding claim 13, Choi discloses an encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) of according to claim 1, wherein said stabilisation layer (5) (Figure 2, high-density uniform layer (131), paragraph [0049]) is of a non-polymeric material (paragraph [0049] describes the high-density uniform layer (131) is formed of silicon and nitrogen).

Regarding claim 14, Choi discloses an encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) according to claim 13, wherein said non-polymeric material is a cured inorganic material (paragraphs [0045] -

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[0049] describes the passivation layer (130) and high-density uniform layer (131) is formed of annealing inorganic silicon and nitrogen).

Regarding claim 15, Choi discloses an encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) according to claim 13, wherein said stabilisation layer (5) (high-density uniform layer (131)) covers at least some protruding structures (4) (Figure 2 structures of layers (112)-(118), paragraph [0027]) of said display device and forms an essentially planar surface (Figure 2 shows a planar surface) over said covered protruding structures (Figure 2 structures of layers (112)-(118), paragraph [0027]).

Regarding claim 16, Choi discloses an encapsulation structure according to claim 13, wherein an essentially cavity-free interface is formed between said stabilisation layer (5) (high-density uniform layer (131)) and said sealing structure (3) (passivation layer (130)).

Regarding claim 17, Choi discloses an encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) according to claim 13, wherein the thermal expansion coefficient of said stabilisation layer (5) (high-density uniform layer (131)) is essentially the same as the thermal expansion coefficient of said sealing structure (3) (passivation layer (130)). Since the materials of the two layers are made of essentially the same material it is inherent that thermal expansion coefficient is essentially the same.

Regarding claim 18, Choi discloses an encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) according to claim 13,

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wherein the thickness of said stabilisation layer (5) (high-density uniform layer (131)) is at least 0.1 μm refer to paragraph [0049] where the thickness range is 0.001-1.0 μm .

Regarding claim 19, Choi discloses an encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) according to claim 13, wherein said encapsulation structure (The combination passivation layer (130) and high-density uniform layer (131)) is transparent. Since the materials anticipated the features of the materials are anticipated too.

Regarding claim 21, Choi discloses an encapsulation structure according to claim 1, wherein said display device comprises protruding structures (4) (Figure 2 structures of layers (112)-(118), paragraph [0027]) with negative slopes which forms shadow regions. Refer to figure 2.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Williams whose telephone number is (571) 270-5279. The examiner can normally be reached on Monday thru Friday 7:00 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron Williams/
Examiner, Art Unit 2889

/Karabi Guharay/
Primary Examiner, Art Unit 2889